

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/573,682

Examiner: Bryan M. Lettman

Applicants: David Paul Manson et al.

Art Unit: 3746

Title: CLEANING METHOD OF A
ROTARY PISTON VACUUM PUMP

Confirmation No.: 7131

Atty. Docket No.: M04B132

Filed: September 18, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir/Madam:

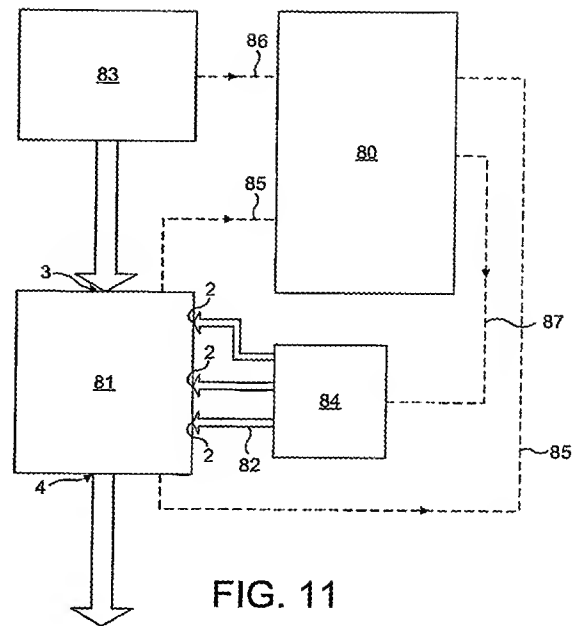
Applicants appeal the Final Office Action of April 29, 2010, which rejects all pending claims 1-20. Specifically, claims 1, 12, 13, 17 and 20 are rejected under 35 USC 102(e) as being anticipated by PCT Patent Application Publication No. WO2004/005720 to Stellnert (hereinafter referred to as “Stellnert”). Claims 2-11, 14-16, and 18, 19 are rejected under 35 USC 103(a) as being unpatentable over Stellnert in view of various combinations of US Patent Application Publication No. 2002/0034880 to Sakai et al. (hereinafter referred to as “Sakai”), US Patent No. 5,718,565 to Kuhn et al. (hereinafter referred to as “Kuhn”), and US Patent No. 6,224,326 to Puech (hereinafter referred to as “Puech”).

BACKGROUND

The present invention is directed to a method for managing deposits within a pump that evacuates a process tool. As shown in one embodiment of the invention illustrated in FIG. 11, the method effects controller 80 to receive data indicating the

performance of pump 81 and operating characteristics of tool 83, respectively. Controller 80 controls fluid delivery system 84 to introduce fluid for dissolving, diluting or otherwise disengaging deposits, which have accumulated on the internal working surfaces of pump 81, based on the data received.

Claim 1 defines the invention as a method for managing deposits within a pump mechanism by introducing fluid suitable for dissolving, diluting or otherwise disengaging deposits which have accumulated on the internal working surfaces of the pump, the method comprising the steps of: (a) monitoring the performance of the pump; (b) receiving process data from, or directly associated with, a tool being evacuated by the pump; (c) calculating fluid flow characteristics required to compensate for the accumulation of deposits on the internal working surfaces of the pump based on the monitored performance and the process data; and (d) introducing fluid into the pumping mechanism in accordance with the calculated characteristics.



ISSUE

The issue requested for review is whether Examiner errs in asserting that Stellnert anticipates the claimed step “*receiving process data from, or directly associated with, a tool being evacuated by the pump*” under 35 USC 102.

ARGUMENTS

- I. **To anticipate a claim, the reference must teach each and every element of the claim.**

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

II. Stellnert does not anticipate claim 1 of the invention, because it fails to teach each and every element as set forth in the claim, either expressly or inherently.

Stellnert discloses a lobe pump suitable for milking animals. *See, page 8, lines 31-34*. As shown in FIG. 2 of Stellnert, lobe pump 1 includes an injector pipe 13 capable of injecting liquid into the pump in order to dissolve the condensed milk deposited on the surfaces (14a, 18a and 19a) of the lobes (18 and 19) and housing 14. *See, page 13, lines 2-14*. A control unit 10 controls the fluid injection based on information, such as the revolution, power consumption, and temperature of the pump received from revolution indicator 24, electricity meter 25 and temperature sensor 6, respectively. *See, page 11, lines 19-31*.

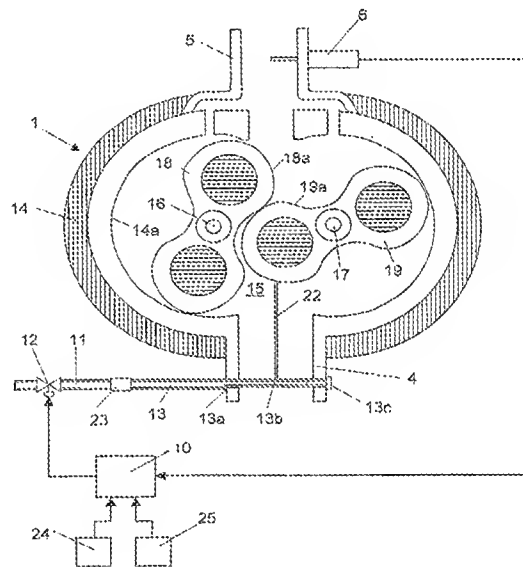


Fig 2

Stellnert does not expressly teach the claimed step “receiving process data from, or directly associated with, a tool being evacuated by the pump.” As discussed above, the control unit 10 receives signals indicating revolution, power consumption, and temperature of pump 1. Those parameters are collected from and associated with pump 1, instead of a tool being evacuated by the pump. Applicants respectfully submit that there is no explicit teaching in Stellnert that control unit 10 receives process data from a tool being evacuated by the pump.

Stellnert does not inherently teach the claimed step “*receiving process data from, or directly associated with, a tool being evacuated by the pump.*” The Examiner asserts “process data indicating performance of the pump is directly associated with process data of the tool being evacuated, since changes in the conditions within the tool being evacuated would directly cause changes in the outlet conditions of the vacuum pump and changes in the efficiency and speed of the pump.” *See, the Final Office Action, page 8, lines 9-13.* Applicants do not dispute that a change in tool conditions would cause a change in pump performance. However, Applicants respectfully submit that data indicating pump performance are mere information derived from the process data of tool, and are not directly associated with the tool. For example, power consumption of a pump may not accurately indicate a gas outflow rate of a tool, because the power consumption can be heightened when there is clogging in the pump, while the gas outflow rate is perfectly normal. As another example, the temperature of the exhaust gas from a pump is not the same as the temperature of the gas evacuated from the tool.

Furthermore, the claimed invention includes a tool, in which various process gases can be introduced at different rates to process a semiconductor wafer, whereas Stellnert concerns animals that produce milk. A tool is not comparable to an animal. An animal does not receive various process gases, let alone the capability of adjusting the flow rates of those gases.

As such claim 1 is not anticipated by Stellnert under 35 USC 102. Independent claim 17 includes “*means for receiving process data from a tool adapted to be evacuated by the pump.*” For the reasons discussed above, claim 17 is not anticipated by Stellnert under 35 USC 102, either.

III. Claims 2-16, 18 and 19 are patentable over the cited prior art references due to their dependency from claim 1.

Claims 2-16, 18 and 19 depend from independent claim 1, and include all limitations recited therein. Accordingly, they are patentable over the cited references under section 102 or 103.

CONCLUSION

As discussed above, all pending claims 1-20 are patentable over the cited prior art references under section 102 or 103. As such, Applicants respectfully request that the rejections be reversed and all pending claims allowed. Applicants do not believe that any additional fee is due, but as a precaution, the Commissioner is hereby authorized to charge any additional fee to deposit account number 50-4244.

Respectfully submitted,

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